



# Construction of the Meteorological Datasets in National Meteorological Center of CHINA

XIONG Anyuan

(Meteorological data division, NMC)

---

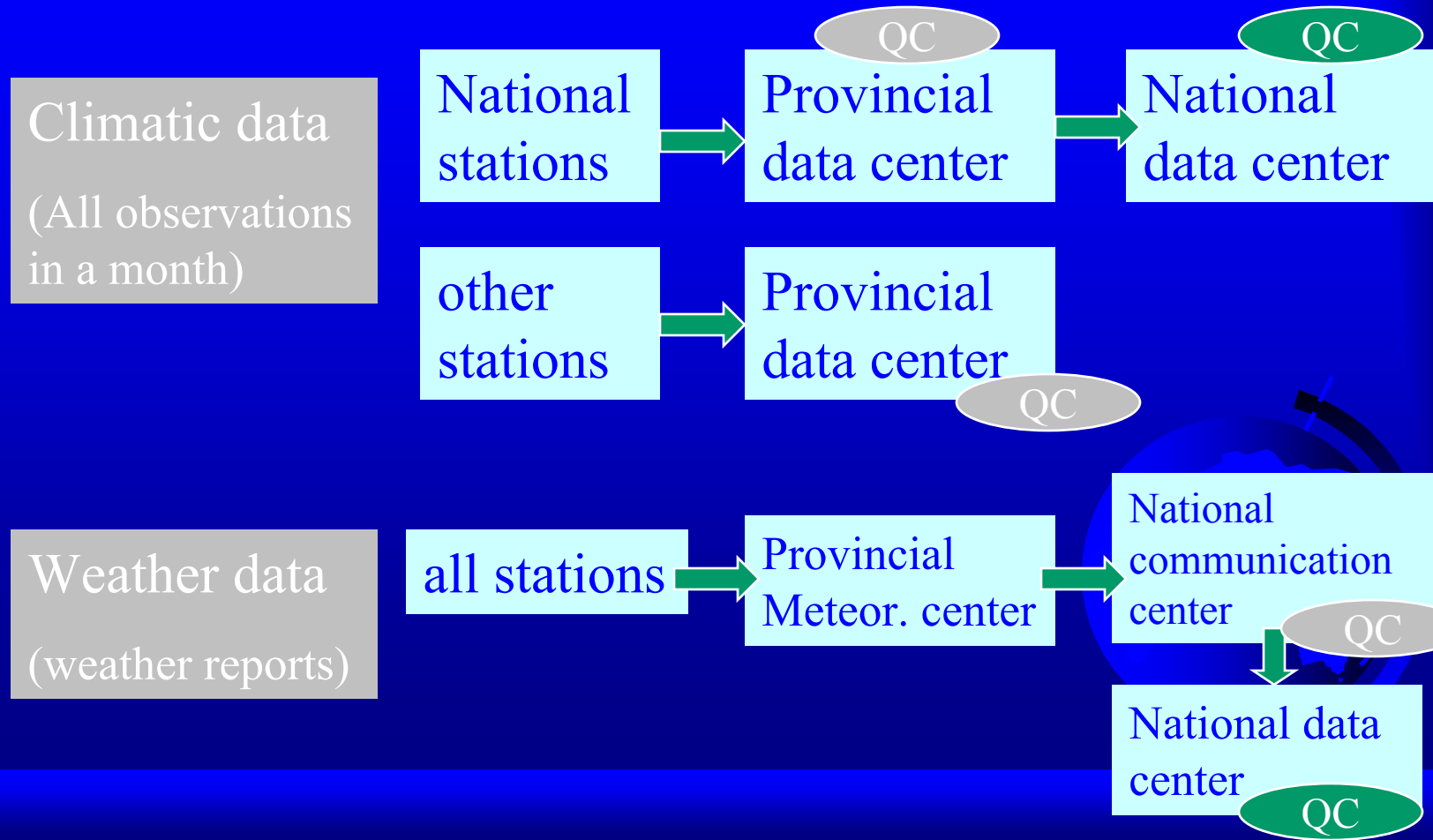
1. Review of data processing in China
2. Main dataset products
3. The related standards and rules of dataset developing
4. The quality control of the data





# Review of data processing in China

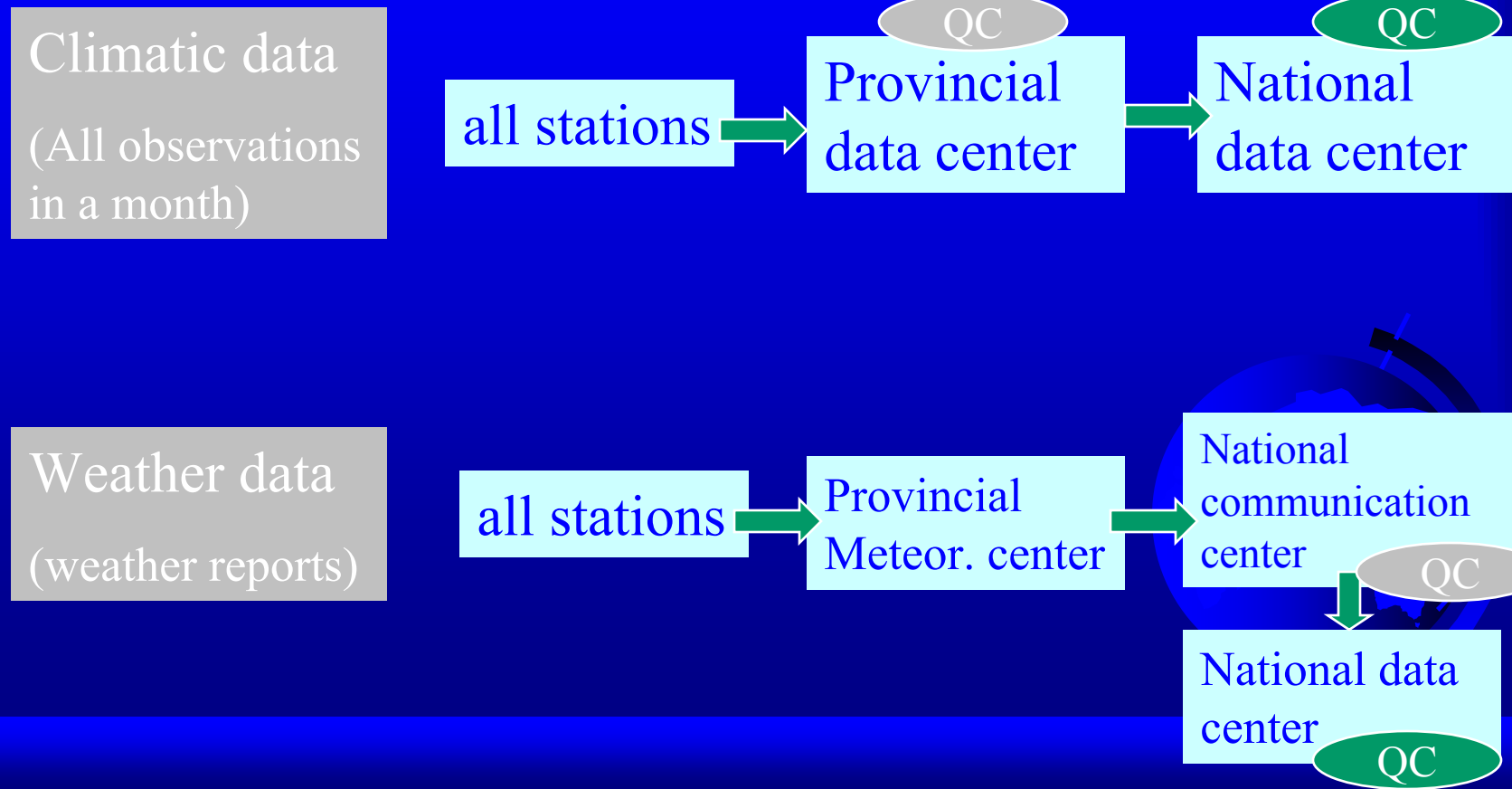
## Surface Observational data





# Review of data processing in China

## Upper air Observational data





# Review of data processing in China

## Radiation Observational data

All  
observations  
in a month





# Review of data processing in China

---

## The data processing in NMC include:

- Transform the observation of a month into a standard format
- Quality control for the data
- Statistics for developing climatological values
- Make the data into database
- Developing some datasets for sharing





# Review of data processing in China

## The process of developing datasets:

- Collect all archive of the kind of data
- Organize the data based on data classification rule
- Transform the data into a regular format
- Quality control
- Make the metadata and document for the data
- Form a dataset

A dataset



- Entity of data
- Metadata file
- Documentation file



# Main dataset products

## 1. Surface observation meteorological dataset

- all the national stations (674) in CHINA
- Most of surface observation elements
- Hourly and daily, monthly, yearly statistics
- At period of 1951-2003





# Main dataset products

---

## 2. Surface weather phenomena dataset

- all the national stations (674) in CHINA
- 18 weather phenomena (rainfall, snow, fog, sand dust, freeze, tornado, strong wind, ....)
- Daily occurrence and its time
- At period of 1954 -2001







# Main dataset products

---

## 3. Surface climatic normals (1961-1990, 1971-2000)

- all the national stations (674) in CHINA
- 13 elements
- Dekadly, monthly and yearly normals
- base periods of 1961 –1990, 1971-2000



# Main dataset products

---

## 4. Upper-air radiosonde dataset

- all the radiosonde stations (120) in CHINA
- All upper-air elements in specified levels
- Two time a day, and monthly mean
- At period of 1951-2003





# Main dataset products

---

## 5. Radiation dataset over China

- all the 98 radiation-observing stations in CHINA
- global radiation, direct radiation, scattered radiation, net radiation and reflected radiation
- Hourly and daily, monthly statistics
- At period of 1957-2003



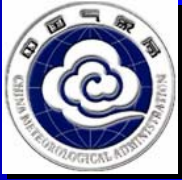
# Main dataset products

---

## 6. Agricultural meteorological dataset over China

- more than 600 national agrometeorological stations
- agrometeorological disasters, the growth of the crops and the crop outputs
- Dekadly and monthly
- At period of 1990-2003





# Main dataset products

## 7. Global surface weather reports dataset

- all the global surface weather stations
- all of surface weather elements
- 4 times a day
- At period of 1980-2003

## 8. Global upper-air weather reports dataset

- all the global radiosonde weather stations
- all of upper-air weather elements
- 2 times a day
- At period of 1980-2003





# The related standards and rules for datasets developing

---

## The related standards and rules include:

- The rules of data sorting, coding and naming
- The rules of flows for dataset developing and archiving
- The format standard of the metadata
- The format of the documentation of the meteorological dataset





# The related standards and rules for datasets developing

---

The rules of data sorting, coding and naming

In order to:

- How to classify the meteorological data
- How to code the data based on its classification
- How to name the dataset and file





## The general class of meteor. data

<b>Class(first level)</b>	<b>code</b>	<b>identification</b>
Surface data	A	SURF
Upper-air data	B	UPAI
Ocean meteor. data	C	OCEN
Radiation data	D	RADI
Agrometeorological data	E	AGME
Numerical analysis and prodiction data	F	NAFP
Atmospheric components data	G	ATCM
proxy data	H	HPXY
Meteor. Disaster data	I	DISA
Meteor. Radar data	J	RADA
Meteor. satellite data	K	SATE
Scientific experiment data	L	SCEX
Operational Service output	M	SEVP
Other data	Z	OTHE





# The related standards and rules for datasets developing

---

## The format standard of the metadata

A metadata standard for Meteor. Dataset has been developed with references of :

- WMO Core Metadata;
- ISO Geography information metadata standard ( ISO 19115 )
- Chinese sustainable development information core metadata dictionary





# The format standard of the metadata in NMC

- ❖ Metadata entity set information
- ❖ Data set identification information
- ❖ Content information
- ❖ Data quality information
- ❖ Keywords information
- ❖ Data and DateTime information
- ❖ Geographic extent information
- ❖ Vertical extent information
- ❖ Temporal extent information
- ❖ Access rights or restrictions information
- ❖ Format information
- ❖ Distribution information

12 information parts

Total 79 items

Which include 25  
obligation items





# The quality control of the data

## 1 Quality check for surface, upper-air and radiation datasets

- format checking
- limit checking
- inner consistency checking
- temporal consistency checking
- vertical consistency checking, etc

## 2 Inhomogeneity test and adjustment

- For monthly surface temperature over china



# Services of the datasets

- 1 In the intranet of NMC of China, all datasets can be retrieved and downloaded online.
- 2 In the internet, all datasets metadata can be retrieved. Datasets can be gotten by registered user.

■ Web Page(in Chinese): [CDC.CMA.GOV.CN](http://CDC.CMA.GOV.CN)



# The intranet web page for data sharing

气象中心资料服务网- Fantasia Web Explorer

文件(F) 查看(V) 编辑(E) 收藏(A) 快捷组(G) 工具(T) 选项(O) 功能(P) 窗口(W) 帮助(H)

地址: http://data.nmc.gov.cn/

链接: 免费下载, 在 收藏: Microsoft Internet Explo... 联想电脑公司 推荐的节点... 链接

## 国家气象中心气象资料服务网

数据调用接口 | 新增数据资源 | 关于本网站 | 联系我们

### 申请用户

用户名

密码

GO  EXIT

- ..> 气象资料标准规范
- ..> 气象资料通用格式
- ..> 气象资料共享政策

### News

- 从5月22日起, GMS5卫星云图资料转为风云2号资料。
- 中国地面的时、日、旬、月值资料新增至2003年的检索, 欢迎会员用户下载使用。

友情链接

### 资料目录

- 中国地面气象观测资料 (1951—) 数据说明 | 元数据 | 台站信息
- 中国地面气候标准值 (1971—2000) 数据说明 | 元数据 | 台站信息
- 中国地面天气现象资料 (1951—) 数据说明 | 元数据 | 台站信息
- 中国高空探测规定层资料 (1951—) 数据说明 | 元数据 | 台站信息
- 中国高空探测规定层累年值 (1971—2000) 数据说明 | 元数据
- 中国农业气象资料 (1991—) 数据说明 | 元数据 | 台站信息
- 全球地面气候标准值 (1961—1990) 数据说明 | 元数据 | 台站信息
- 全球地面天气报资料 (1980—) 数据说明 | 元数据 | 台站信息
- 全球高空天气报资料 (1980—) 数据说明 | 元数据 | 台站信息
- 全球海洋天气报资料 (1980—) 数据说明 | 元数据
- 地面天气图资料 (Micaps格式, 1998—) 数据说明 | 元数据
- 高空天气图资料 (Micaps格式, 1998—) 数据说明 | 元数据
- GMS卫星云图资料 (1998—) 数据说明 | 元数据

资料下载

下载PDF格式文件阅读器



# The internet web page for data sharing

cdc.cma.gov.cn

Internet browser window showing the CDC Online website (中国气象科学数据共享服务网) for data sharing.

The website header includes the CDC Online logo, the title "中国气象科学数据共享服务网", and the WDC (World Data Center) logo. Navigation links include "首页" (Home), "English Version", "用户名:" (Username), "密码:" (Password), "登录" (Login), and "注册" (Register).

The main content area features a "New ..." section with a map of China and a list of news items:

- 共享会员开始接受申请
- 共享数据集技术研讨会目前召开
- 上半年共享数据服务成果显著
- 数据资源调查组赴宁调查
- 可下载美国实时空间天气资料概况
- 美试验利用因特网传递多普勒雷达资料

The "气象数据" (Meteorological Data) section lists various data types:

- 地面气象资料 (Surface Meteorological Data)
- 高空气象资料 (Upper Air Meteorological Data)
- 太阳辐射资料 (Solar Radiation Data)
- 海洋气象资料 (Marine Meteorological Data)
- 农业气象资料 (Agricultural Meteorological Data)
- 历史替代资料 (Historical Replacement Data)
- 四大科学实验 (Four Major Scientific Experiments)
- 气象灾害资料 (Meteorological Disaster Data)

The "关于我们" (About Us) section provides information about the website's purpose and history.

The left sidebar contains navigation links for "数据共享" (Data Sharing), "站内导航" (Intra-site Navigation), and "相关项目" (Related Projects).

The bottom of the page includes a "友情链接" (Link Exchange) section.



THANKS !

